

REMARKS

Claims 16-18, 20 and 23-29 are pending in this application, of which claims 16, 20, 23-25, 27 and 29 have been amended. Claims 19 and 21 have been canceled. No new claims have been added.

In the Non-Final Office Action mailed January 21, 2010, the claims were rejected as follows:

1. Claims 16-20 and 23-28 under 35 U.S.C. §102(b) as anticipated by U.S. Patent 3,499,808 to Obeda; and
2. Claim 29 under 35 U.S.C. §103(a) as unpatentable over Otani et al. (previously applied) in view of Daly.

Applicants respectfully traverse these rejections.

In paragraph [0074], the fifth embodiment of the present application is described as "Fig. 12 is a longitudinal sectional view of the protruding portion of the horn 3 according to the fifth embodiment. Fig. 13 is a longitudinal sectional view of the ultrasonic welding structure according to the fifth embodiment before welding, and Fig. 14 is a longitudinal sectional view of the ultrasonic welding structure according to the fifth embodiment after welding. As shown in Fig. 12, the horn 3 includes the concave portion 3a, and the concave portion 3a includes a protruding portion 3d having a generally semispherical longitudinal cross section. Differently from the protruding portion 3c shown in Fig. 8, the protruding portion 3d is formed to protrude downward of a bottom of the concave portion 3a. In addition, an inclined surface 3e is formed on the horn 3. The inclined surface 3e is formed integrally with the horn 3 and the protruding portion 3d, and is a smooth continuous surface from the bottom of the concave portion of the horn 3 to the proximal portion of the protruding portion 3d. As shown in Fig. 12, exemplarily specific dimensions of the protruding portion 3d are a radius R4 of a sphere of 0.3 millimeter, and heights H1 and H2 of 0.7 millimeter and 0.5 millimeter, respectively."

The above shape of the hone 3 of the fifth embodiment is not taught or suggested by any of the cited references. Furthermore, this feature produces remarkable effects, as described in paragraph [0075] "the protruding portion 3d and the inclined surface 3e function as follows. By pressing the protruding portion 3d against the resin 10 first, it is possible to soften only a part of the resin 10 and to gradually perform welding. By causing the inclined surface 3e to press a resonator acceptance unit 18, in particular, this pressing force generates an outward component force corresponding to an inclination of the inclined surface to fall down the softened resin 10 outward. The resin 10 thus fallen down is fixedly bonded onto an upper surface of the fixing resins 21, whereby the resin 10 can be fixed. By thus using the component force resulting from the pressing force, the pressing force of the horn 3 can be reduced as compared with the conventional technique. Since the welding can be performed with the lower force, the problems derived from the excessive pressing force can be solved."

The Examiner has urged that these features are disclosed in Fig. 8 of Obeda.

Applicants respectfully disagree.

Obeda fails to disclose that a bottom surface of the resonator includes a concaved portion, a peripheral surface being located outside the concaved portion of the bottom surface, and a protruding portion having a substantially semispherical or conical shape and extending beyond a level of the peripheral surface from a bottom of the concaved portion toward the heating target.

Thus, the prior art rejections should be withdrawn.

Accordingly, claims 16-18, 20 and 23-29, as amended, are in condition for further examination.

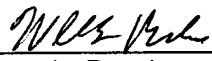
The Director is hereby authorized to charge any deficiency in the fees filed, asserted to be filed or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our Deposit Account No. 04-1105.

In view of the above amendment, applicant believes the pending application is in condition for allowance.

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CUSTOMER NO.: 21874

Respectfully submitted,

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